

# 2019 Annual City of Jacksonville Drinking Water Quality Report

**PWS ID# NC0467010 Report Issued April 2020**



We are pleased to present the Annual Drinking Water Quality Report. This report is a snapshot of your water quality in 2019. It includes details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. Our goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information. **If you have any questions about the report or concerning your water, please contact Jacksonville Public Services at 910 938-5233. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any regularly scheduled meeting of the Water and Sewer Advisory Committee, held monthly at City Hall.**

**What the EPA Wants You to Know:** Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available through the Safe Drinking Water Hotline: 800-426-4791

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Jacksonville is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [EPA.gov/SafeWater/Lead](https://www.epa.gov/safewater/lead). You may also request to have your water tested by the City of Jacksonville at no cost.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include **1. Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; **2. Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; **3. Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; **4. Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and **5. Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

**Jacksonville Water Sources:** The City of Jacksonville draws its water from two aquifers located deep underground. The deepest source is a Cretaceous Aquifer known as the Black Creek Aquifer. The City has 15 Cretaceous wells that draw water from the Upper and Middle Black Creek Aquifer generally located along US258 and Gum Branch Road near the Town of Richlands. The water in this aquifer is high quality and requires no treatment other than chlorination for disinfection. It is naturally soft and contains natural fluoride, essential for dental health.

The City's second source of water is the shallower Castle Hayne Aquifer. The Castle Hayne Aquifer also contains good quality water; however, the City does treat this water to remove organics and improve taste and smell. The City has 20 wells in the Castle Hayne Aquifer that are pumped to the City's Nano filtration water treatment plant. Once treated the water is pumped into the City's distribution system where it blends with water from the Black Creek Aquifer.

**Source Water Assessment Program (SWAP) Results:** The North Carolina Department of Environmental Quality (DEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the City of Jacksonville was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized on the next page:

## Commercial Water Testing & "Purification" Products

There are many companies that want to sell you a product using tactics to scare you about your water.

Before you invite someone to test your water, or propose a filtering process, **call directly to the City's water plant at 938-5234 to speak with an expert.**



**Get a Water  
Saving Kit**  
at Utility Billing  
inside City Hall

Lower Susceptibility Rating

Moderate Susceptibility Rating

Well #3 - 258 Plant  
Well #4 - 258 Plant  
Well #5 - 258 Plant  
Well #12 - Gum Branch  
Well #13 - Gum Branch  
Well #16 - Gum Branch  
Well #17 - Gum Branch  
Miracle Meadows #2  
Parkwood Soccer #1  
Drummer Kellum #2

Well #1 - 258 Plant  
Well #2 - 258 Plant  
Well #11 - Gum Branch Plant  
Well #13 - Gum Branch  
Well #14 - Gum Branch  
Well #15 - Gum Branch  
Well #18 - Gum Branch

Bell Fork #1  
Chaney Creek #1  
Chaney Creek #2  
Commons North #1  
Commons North #2  
Commons South #1  
Commons South #2  
Piney Green #1  
Ramsey Road #1

Well #6  
Well #7  
Business Park #1  
Business Park #2  
Deerfield #1  
Williamsburg Plantation #1  
Williamsburg Plantation #2  
Drummer Kellum #1  
Foxhorn Village

**More about the Source Water Assessment Program:** The complete SWAP Assessment report for the City of Jacksonville may be viewed online at [NCWater.org](http://NCWater.org). Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this website may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, number, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-707-9098.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCS’s in the assessment area.

**Water Quality Data Table of Detected Contaminants:** The City of Jacksonville routinely monitors for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that were detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2019.** The EPA or the State requires the City to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Regulated Synthetic Organic Contaminants (SOC) and unregulated SOC contaminants were sampled in 2017, Volatile Organic Compounds (VOC) were sampled in 2019, and results of those analyses were all below detection limits. Inorganic Compounds were sampled in 2017, and the results for detected contaminants are contained within this report.

The City of Jacksonville sampled for unregulated contaminants (UCMR4) in 2019. The results for detected compounds are contained within this report. **Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.**

**Important Drinking Water Definitions:**

Not-Applicable (N/A) – *Information not applicable/not required for that particular water system or for that particular rule.*

Non-Detects (ND) – *Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.*

Parts per million (ppm) or Milligrams per liter (mg/L) – *One part per million corresponds to one minute in two years or a single penny in \$10,000.*

Parts per billion (ppb) or Micrograms per liter (ug/L) – *One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.*

Picocuries per liter (pCi/L) – *Picocuries per liter is a measure of the radioactivity in water.*

Action Level (AL) – *The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.*

Treatment Technique (TT) – *A required process intended to reduce the level of a contaminant in drinking water.*

Maximum Residual Disinfection Level (MRDL) – *The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.*

Maximum Residual Disinfection Level Goal (MRDLG) – *The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.*

Locational Running Annual Average (LRAA) – *The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.*

Level 1 Assessment – *A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.*

Level 2 Assessment – *A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.*

Maximum Contaminant Level (MCL) – *The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.*

Maximum Contaminant Level Goal (MCLG) – *The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.*

Secondary Maximum Contaminant Level (SMCL) – *Non-enforceable guidelines regarding chemicals that may cause cosmetic or aesthetic effects in drinking water. EPA recommends these secondary standards but does not require water-supply systems to comply.*





**City of Jacksonville  
Water Treatment Plant**  
Nanofiltration monitoring (left)  
Final treatment and storage (right)



## Public Notice: Important Information About Your Drinking Water

### Availability of Monitoring Data for Unregulated Contaminants for the City of Jacksonville

Our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. As our customers, you have a right to know that this data is available. If you are interested in examining the results, please contact Joseph Cram with the City of Jacksonville Water System at 910 938-6534.

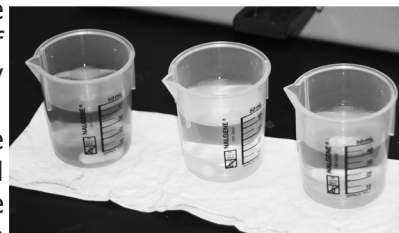
Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

**Responsible Person:** Joseph Cram    **System Name:** City of Jacksonville    **System Address (Street):** 177 New Frontier Way  
**Phone Number:** 910 938-6534    **System PWSID #** 04-67-010    **System Address (City, State, Zip):** Jacksonville, NC 28540  
**Distributed:** April 1, 2020

### Water Quality Data Table of Detected Contaminants (See Definitions Section)

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#### Microbiological Contaminants 2019 - 50 Monthly samples, 600 annual samples

Contaminant (units)	MCL Violation	Your Water	MCL Goal	Maximum Contaminant Level	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	No	N/A	N/A	TT*	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	No	0	0	Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E.coli positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli  Note: If either and original routine sample and/or its repeat sample(s) are E. coli-positive, a Tier I violation exists.	Human and animal fecal waste

*\*If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.*

#### Nitrate/Nitrite Contaminants - March 2019

Contaminant (units)	MCL Violation	Jacksonville Water	Range Low-High	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	No	<1.0	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

#### Lead and Copper Contaminants - June 2017 - 30 Samples

Contaminant (units)	Sample Date	Jacksonville Water	% of sites above the AL	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	2017	0.065	0%	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90 <sup>th</sup> percentile)	2017	<3	0%	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits



# Water Quality Data Table of Detected Contaminants (See Definitions Section)

## Radiological Contaminants - March 2019

Contaminant (units)	Sample Date	MCL Violation	Jacksonville Water	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Alpha emitters (pCi/L)	2019	No	<3 - 9.1	0	15	Erosion of natural deposits
Beta/photon emitters (pCi/L)	2019	No	18.8	0	50*	Decay of natural & man-made deposits
Combined radium (pCi/L)	2019	No	<1	0	5	Erosion of natural deposits
Uranium (pCi/L)	2019	No	<0.67	0	20.1	Erosion of natural deposits

\*The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

## Disinfectants Residuals Summary

	Year Sampled	MRDL Violation	Jacksonville Water (Highest RAA)	Range Low-High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2019	No	1.09	0.23 - 2.01	4	4.0	Water additive used to control microbes

## Stage 2 Disinfection Byproducts Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation	Jacksonville Water (Highest LRAA)	Range Low-High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	2019	No	43	15 - 47	N/A	80	By-product of drinking water disinfection
B01	2019	No	27	15 - 40	N/A	80	By-product of drinking water disinfection
B02	2019	No	43	30 - 47	N/A	80	By-product of drinking water disinfection
B03	2019	No	28	17 - 42	N/A	80	By-product of drinking water disinfection
B04	2019	No	27	20 - 38	N/A	80	By-product of drinking water disinfection
HAA5 (ppb) [Total Haloacetic Acids]	2019	No	8	5 - 9	N/A	60	By-product of drinking water disinfection
B01	2019	No	7	6 - 9	N/A	60	By-product of drinking water disinfection
B02	2019	No	8	5 - 9	N/A	60	By-product of drinking water disinfection
B03	2019	No	7	5 - 9	N/A	60	By-product of drinking water disinfection
B04	2019	No	7	6 - 9	N/A	60	By-product of drinking water disinfection

## Inorganics Contaminants - February 2017

Contaminant (units)	Year Sampled	MCL Violation	Jacksonville Water (AVG)	Range Low-High	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Fluoride (ppm)	2017	No	0.7	0.2 - 1.0	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium (ppm)	2017	No	157	32 - 245	N/A	N/A	Naturally present in the environment
Sulfate (ppm)	2017	No	30	<15 - 73	250	250	Runoff or leaching from natural deposits; industrial wastes
pH (pH units)	2017	No	N/A	7.54 - 8.55	N/A	N/A	Naturally occurring

## Unregulated Contaminant Monitoring Regulation 4 (UCMR4) - May 2019

Contaminant (units)	Sample Date	Jacksonville Water (AVG)	Range Low-High
Manganese (ppb)	2019	1.50	0.54 - 2.87
HAA6Br (ppb)	2019	6.38	5.65 - 7.03
HAA9 (ppb)	2019	17.65	15.00 - 23.00

\*Unregulated contaminant monitoring helps the EPA to determine where certain contaminants occur and whether the Agency should consider regulating those contaminants in the future.

